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Retrospective and Prospective Study on Injuries during Coital Accidents at the Central Hospital of Yaounnde: A Study of 23 Cases

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Abstract

Introduction: A penile fracture is the traumatic rupture of the turnica albuginea of one of both cavernous bodies of an erect penis. It is a urologic emergency in young adults. The objective of our study is to determine the epidemiologic, clinical, and therapeutic aspects and evaluate the complications at the Yaounde Central Hospital (YCH). **Methodology:** It was a cross-sectional retrospective and descriptive study, carried out for a period of five years, from 2015 to 2020, followed by a prospective phase for a period of 1 year, from December 2020 to 2021 at the Urology Unit of Yaounde Central Hospital. **Results:** Our study involved 23 patients. The mean age was 34 ± 4 years with extremes of 23 - 65 years. Married men were the most involved, with 16 cases (69.6%). The majority of patients presented for consultation within the first 6 hours (60.9%). The mean delay time before the consultation was 5 [3 - 24] hours, with extreme values of 1 - 72 hours. Sitting position during sexual intercourse was mainly found (56.5% of cases), while alcohol consumption was the main environmental risk factor found (47.8% of cases). Penile pain (100.0%) and deformation of the penile shaft (91.3%) were the most encountered symptom during admission. The frequency of cavernosa involement was 87.0%. The injury was partial in the majority of cases (95.0%), involving both corpus cavernosa (55.0%) and mostly on the right (60.0%). The mean management delay

was 5 hours standard deviation [5 - 7], with extremes of 2 - 48 hours. The intra-cavernous hematoma was the essential per-operative finding in all the operated cases (100.0%). Most patients resumed sexual intercourse 2 - 3 months following management (65.3% of cases). After one year of treatment, 78.3% of patients declared satisfactory sexual activity. **Conclusion:** Penile fracture is an anthological emergency in young adults. The management is essentially surgical. Functional prognosis depends on the promptitude of surgical intervention.

Keywords

Penile Fractures, Young Adults, Sexual Activity

1. Introduction

A penile fracture is the traumatic rupture of the turnica albuginea of one of both cavernous bodies, and is one of the traumatic injuries of the penis. It is an accident that occurs in a swollen penis and occasionally, lacerated albuginea of the cavernous bodies, with extravasation of contents into its envelopes. It can be associated with a rupture of the spongy urethra and result in maturation [1]. Diagnosis is clinical; its actual incidence in Cameroon is unknown since few studies have been carried out. The objective of our study is to determine the clinical and therapeutic aspects and evaluate complications

2. Materials and Methods

It was a cross-sectional descriptive study with retrospective recruitment of cases, carried out for a period of 5 years: from 2015 to 2020, followed by a prospective period of one year, from December 2020 to 2021 at the Urology Unit of the Central Hospital of Yaounde.

In the retrospective phase, data collection was done using theatre registers, hospitalisation registers, and archives of medical files in the theatre and at the Urology Unit. Incomplete and inexploitable medical files were excluded. Complete and exploitable medical files were included. Sociodemographic characteristics, clinical presentations, and different therapeutic modalities were the main variables studied. Analysis was done using the data analysis program, Epi info 7.0.

3. Results

3.1. Epidemiological Aspects: Sociodemographic

During our study period, 23 patients with penile fractures, confirmed by the surgical team at the Urology and Andrology Unit of the Central Hospital of Yaounde were included. The mean age of our patients was 34 years with extremes of 23 - 65 years. Regrouping by 10-year ranges revealed a peak frequency range of 30 - 40 years. Married men were mostly involved (69.9% of cases). We did not find any significant religious or professional correlation (**Table 1**).

Table 1. Sociodemographic characteristics of the population (N = 23).

Variables	Value	%
Age (in years)		
[20 - 30[	5	21.7
[30 - 40[	13	56.5
[40 - 50[	2	8.7
≥50	3	13.0
Marital status		
Married	16	69.6
Single	7	30.4
Profession		
Moto-taximan	3	13.0
Military	2	8.7
Sports	2	8.7
Others	16	69.6
Religion		
Muslim	6	26.1
Christian	6	26.1
Others	11	47.8

3.2. Clinical and Paraclinical Aspects

3.2.1. Delay in Consultation, Methods, and Associated Circumstances

A majority of patients presented within 6 hours (60.9%). The median delay time was 5 hours with extreme values of 1 - 72 hours. Sitting position during sexual intercourse was mainly found (56.5% of cases), while alcohol consumption was the major environmental risk factor found (47.8% of cases) (Table 2).

3.2.2. Symptoms on Admission

Penile pain (100.0%) and shaft deformation (91.3%) were the main symptoms found on admission (Table 3).

3.2.3. Echographic Findings: Cavernous Involvement

The frequency of cavernous involvement was 100%. The lesion was mostly partial in a majority of cases (95.0%), involving both cavernous bodies (55.0%), and mostly on the right (60.0%) (Table 4).

3.2.4. Urethral Involvement

The frequency of urethral involvement was 95.7%, with a majority involving the penile site (90.9%) (Table 5).

3.2.5. Surgical Management

Most patients were managed within 6 hours following admission (60.9% of cases). The median management delay timing was 5 [5 - 7] hours, with extremes of 2 - 48 hours. The frequency of surgical treatment and trans-urethral catheterisa-

tion was 100% of cases respectively (Table 6).

All the patients were operated upon under spinal anaesthesia. The main surgical approach was degloving (75.0% of cases). Most of the surgeries lasted for 30 - 60 minutes (35.0%). The mean duration of surgery was 74.05 ± 34.76 minutes, with extremes of 18 - 150 minutes. Intra-cavernous hematoma was the main per-operative finding in all the operated cases (100.0%) and cavernous bruises. The mean hematoma volume was 34.00 ± 14.38 ml, with extremes of 10 - 60 mL. With respect to blood loss, the mean was 153.50 ± 62.21 ml, with extremes of 80 - 300 mL. No patient was transfused of blood. Most of the trans-urethral catheters were left in place for 15 - 21 days in 65.3% of cases. The mean duration was 20.09 ± 8.24 days, with extremes of 10 - 33 days.

Table 2. Distribution of population with respect to delay in consultation, method and associated circumstances (N = 23).

Variables	Value	%
Delay in consultation (in hours)		
<6	14	60.9
[6 - 12[	1	4.3
[12 - 24[	1	4.3
[24 - 48[	5	21.7
[48 - 72[	1	4.3
≥72	1	4.3
Follow up method		
Sitting position	13	56.5
Auto-manipulation of penis	5	21.7
Four-leg position	5	21.7
Associated circumstances		
No associated circumstance	10	43.5
Alcohol consumption	11	47.8
Erection booster	6	26.1
Narcotic intake	2	8.7

Table 3. Population distribution with respect to admission symptoms (N = 23).

Symptoms on admission	Value	%
Penile pain	23	100.0
Penile shaft deformation	21	91.3
Bruise	20	87.0
Penile swelling	19	82.6
Urethrorrhagia	7	30.4

Table 4. Echographic characteristics of cavernous involvement.

Variables	Value	%
Cavernous body lesion (N = 23)		
Yes	20	87.0
No	3	13.0
Number of erectile body lesions (N = 20)		
1	5	25.0
2	11	55.0
3	4	20.0
Laterilisation of cavernous lesion (N = 20)		
Left	8	40.0
Right	12	60.0
Type of cavernous lesions (N = 20)		
Partial	19	95.0
Total	1	5.0

Table 5. Characteristics of urethral involvement.

Variables	Value	%
Urethral involvement (N = 23)		
Yes	22	95.7
No	1	4.3
Urethral site affected (N = 22)		
Penile	20	90.9
Bulbar	2	9.1

Table 6. Population distribution with respect to means of management (N = 23).

Means of management	Value	%
Delay in mamangementy (in hours)		
<6	14	60.9
[6 - 12[	7	30.4
[12 - 24[	1	4.3
≥24	1	4.3
Surgery		
Yes	20	87.0
No	3	13.0
Trans-urethral catheterisation		
Yes	23	100.0
No	0	0.0

3.3. Evolution

Most patients restarted sexual activity within 2 - 3 months following management (65.3% of cases). After one year of follow-up, 78.3% of patients declared satisfactory sexual activities satisfaits carried out (**Table 7**).

4. Discussion

4.1. Age

Most patients were between the age ranges of 30 - 40 years (56.5% of cases). The median age was 34 [30 - 37] years, with extreme values of 23 - 65 years. Our values are similar to those of Sylla *et al.* [1] in Senegal; a hose median age was 31.6 + 6.7, with extremes of 23 - 45 years. This predorminanc e can be explained by the fact that this age corresponds to intense sexual activity and use of aphrodiasics. This age is also noted for concurrence of sexual performance in line with erotic films, most often acrobatic sexual intercourse.

4.2. Marital Status

Married men were mostly involved, 16 cases (69.6%) without precising if sexual activity was with the spouse or an extra-marital partner or a context of rape. Ndiaye *et al.* [2] found an elevated frequency of predorminance to single patients which can be explained by freedom of sexual activity which is common and absence of pre-marital abstinence which is on the rise.

5. Clinical Characteristics

5.1. Delay in Consultation

The median delay was 5 hours. This delay is similar to many results of other authors like Diarra *et al.* [3] in Mali who had a delay of 6 hours, and 4 hours in the findings of Prunet *et al.* [4] reported cases of penile fractures seen sequellae of erectile disfunctionns or curved penis or fibrosis of cavernous bodies. This delay in consultation can be justified by the misunderstanding of urgency in the management of this pathology.

5.2. Associated Circumstances

The most associated circumstance found in our study and also in literature were coiatal errors [5] [6] [7]. The preferred coital position was often with "the woman on top" limiting all control of the man. Coital error results from violent contact by the penis in erection and collision with the symphysis pubis, perineum and internal aspects of the thigh or gluteus of the partner [3]. Other causes of penile fractures accounted for 21.7% of cases in our study resulting from penile manipulations aimed at stopping morning erections or in brutal re-introduction of the penis in the course of a masturbation session. These and linked to developing countries or socio-economic conditions imposing co-habitation, promiscuity hence causing subjects to conceal morning erections [8] [9].

Table 7. Outcome of patients following managemente (N = 23).

Variables	Value	%
Delay in restarting sexual activity(in months)		
<2	3	13.0
[2 - 3[	15	65.3
≥3	5	21.7
Evaluation of sexual activities after one year		
Satisfactory	18	78.3
Non satisfactory	5	21.7

5.3. Clinical Evaluation

It is worth noting that clinical presentation is variable depending on the early or late presentation of the fracture, involvement of one or two cavernous bodies, and the existence of one or two associated urethral lesions. Pain (100%), lateral axes deviation of the penile shaft (91.3%), swelling (82.6%) and bruises (87%) were present in our patients, likewise other publications [1] [10]. Seven patients presented with urethrorrhagia on clerking, with associated urethral lesions on exploration. These urethral lesions gave a picture of the violence of the trauma. Concomitant urethral involvement aggravates morbidity, especially in the long run, with risk of stenosis. Based on the findings of Mangin *et al.* [11] urethra rupture la rupture is reported in about 10% of cases. This rupture partial or total is most often transverse.

6. Echographic Characteristics

In our study, rupture of cavernous bodies was partial in most cases and the most affected site was the right and at the level of the inferior third of the penis. These findings are similar to those of Sow *et al.* [12] in Senegal in 2008, in a similar study on *urethral involvement*: The urethral lesions displayed a picture of the violence of trauma [12]. The anatomic feature of the urethra with respect to the spongy bodies predisposes to it to associated concomitant urethral involvement aggravates morbidity, especially in the long run, with risk of stenosis. Urethral involvement was found in 95.7% of patients in our: these results were contrary to those of several authors like Diarra *et al.* in Mali who didn't find urethral lesions in his study. Touiti *et al.* [13] reported that the level of urethral involvement in the rupture of cavernous bodies is from 10% - 20%. This can be explained by major alcohol consumption in our study population. This state can potentiate kinetic energy and resolution in lesions.

7. Therapeutic Modalities

Based on management, preference was made on urgent surgical treatment in order to prevent complications like fibrosis, curvature of cavernous bodies, as well as erectile dysfunction and urethral stenosis in case of associated urethral rupture,

as demonstrated by Amer *et al.* [14] in a meta-analysis of 58 articles 3213 cases. In our study, surgery was done in 20 patients, 100% of cases with a mean operative duration of 74.05 ± 34.76 minutes.

The circumferential surgical approach was preferred in our study, same as several authors [13] [15] [16], since this approach involves a complete view of the lesions and leaves an esthetic scar m; whereas, Mansi *et al.* [17] criticises this surgical approach and attributes it to cause oedema and skin necrosis. We have never noted any complication associated with this approach regularly applied in our practical experience. Other associated urethral lesions in this study were managed by end-to-end urethrhaphy during the same surgical intervention.

After early surgical intervention, 11 patients presented with mild anemia. Early management therefore significantly reduces the risk of hemorrhage.

Most patients restarted sexual activity 2 - 3 months after management, in 65.3% of cases. After one year of treatment, 78.3% of patients declared satisfactory sexual activities. Most authors [3] [7] [13] [15] [16] agree with the fact that surgical repair is less related to complications. The level of complications in conservative management varies between 10% - 53% and brings about risks of painful erections, persistent hematoma with infection tendency and evolution into abscess formation, artero-venous fistulae, erectile dysfunction and urethral rupture [15] [16]. Meanwhile, according to Mydlo *et al.* [18], for 5 patients who refused surgery, 4 had a normal erection and only one presented with a curved penile shaft as sequellae after treatment.

8. Conclusion

Penile fracture is an anthological emergency in young adults. Pain and deformation of the penis are the main symptoms. Ultrasound of the corpora cavernosa is a reliable means of diagnosing cavernous lesions. The involvement of the corpora cavernosa is partial in most cases and the site of injury is mainly the penile area. Management is essentially surgical by disgorgement of the penis and remains the most effective means of exploration and management of lesions in this condition and the prognosis depends on the speed of the surgical intervention.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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